M1350A Support Upgrade Kit M1360-69201

Upgrades Series 50 IX Fetal Monitor (M1350A) to Series 50 XM (M1350B)

SERVICE SUPPLEMENT

Important! Return Your M1350A Components

Please call your local Philips Response Center for details of the return procedure and address.

Please clean and disinfect the components of the M1350A monitor that you did not reuse according to the instructions in this document, and return them, reusing the kit carton, to the address given to you by your local Philips Response Center. This entitles you to the exchange part pricing for the Support Upgrade Kit. Otherwise, you will be charged the new part price.

Disposal of the returned parts will be handled by Philips.

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PHILIPS

What the M1360-69201 Support Upgrade Kit is For

If the front panel of your M1350A monitor is damaged or broken, you need the M1360-69201 Support Upgrade Kit for repair. This service supplement tells you how to do it. This upgrade/repair should be carried out by qualified service personnel, either by the hospital's biomedical department, or by Philips Support.

For further information on the fetal monitors please refer to the *Instructions for Use* and *Service Guide* for your monitor.

Kit Contents

The M1360-69201 Support Upgrade Kit consists of:

- Chassis assembly fitted with:
  - Front panel
  - Frontend board
  - Digital interface board
  - Loudspeaker
  - Display board
- New serial number label
- EPROMS
- Fetal Monitoring Documentation CD-ROM
- This Service Supplement

What You Need to Do

To complete the repair/upgrade, you need to remove the following components from your existing monitor and fit them into the new chassis supplied in the Support Upgrade Kit:

- Top cover
- Power supply
- All original boards except those already fitted to the new chassis assembly (see "Kit Contents" above).
- Recorder

You need to enter the new serial number and configure the monitor with the appropriate settings using the "pegserv.exe" service support software.

NOTE Call your local Philips Response Center to obtain:

- Access codes for serial number, option settings and FHR Alerting
- Instructions for returning parts from the M1350A, and a return address

Initial Inspection

The upgrades are supplied packed in protective shipping cartons. Before unpacking, visually check the packaging and ensure there are no signs of mishandling or damage. With reference to the kit contents, ensure that you have received the correct components and that the contents are complete.

Claims for Damage

If the shipping cartons show signs of damage, contact the carrier and arrange for an inspection to be made. If any of the equipment supplied is damaged, you should contact both the carrier and your local Philips service organization. Arrangements will then be made for repair or replacement, as appropriate.

What You Need

Upgrading a monitor requires simple tools:

- Pozidrive screwdriver size 1
- Safety test equipment
- PC for configuration
- Service software “pegserv.exe”
- Cable (part number M1360-61675) to link PC to fetal monitor
- Access code for serial number, and FHR Alerting, if applicable (obtain from your local Philips Response Center). Record the serial number, its access code, and the FHR Alerting enabling code in the boxes provided:

Serial Number: ☐ FHR Alerting Enabling Code: ☐

Serial Number Access Code: ☐

Instruction 1: Checking Current Configuration

The first step in the upgrade process is checking the current configuration. You do this by reading out the configuration settings of the monitor with the "pegserve.exe" service software. See the *Service Guide* on the enclosed CD-ROM for instructions on how to read the configuration settings.

Configuration Settings

The following table shows configuration settings for the monitor. Not all configuration settings are available for every monitor, but can vary according to software revision. The "Menu Setting" is included for reference purposes only.

NOTE Only configuration settings C01 through C06 are handled by "pegserv.exe".

Configuration Table			
Menu Setting	**Description**	**Choices**	**Record Your Setting**
C01	Time setting	0 = AM/PM 1 = 24:00	
C02	Date format	0 = US 1 = Europe	
C03	IUP format	0 = mmHg 1 = kPa	
C04	Paper format	0 = 30-240 bpm 1 = 50-210 bpm	
C05	Recorder offset	0 .. 11	
C06	Recorder heat	0 .. 11 (SET THIS TO 11)	
C07	Language option	1 = English (US) 2 = French 3 = German 4 = Dutch 5 = Spanish 6 = Italian 10 = Japanese 13 = Chinese (simplified) 17 = Russian	
C08	Alert acknowledgement at marker	0 = off 1 = on	
C09	Note transmission	0 = off 1 = Roman-8	
C10	Interface setting	00 .. 15	
C11	TOCO external gain	0 = 100% gain 1 = 50% gain	
C12	NST-timer/paper-out-alert	0 .. 5	

Configuration Table			
Menu Setting	**Description**	**Choices**	**Record Your Setting**
C13	Serial port selection	0 = serial port on the System Interface board (RS422) set to active 1 = serial port on the Telemetry board (RS232) set to active	
C14	Analog FMP	0 = analog fetal movement print-out OFF 1 = analog fetal movement ON	
C15	Not used		
C16	NiBP paper save mode	0 = off 1 = on	
C17	MECG trigger click volume	0 = off 1 = quiet 2 = medium 3 = loud	
C18	$FSpO_2$ response time	0 = slow 1 = fast	
C19	$FSpO_2$ inop alarm	0 = off 1 = on	
C20	$FSpO_2$ alarm volume	0 = off 1 = quiet 2 = medium 3 = loud	

Instruction 2: Removing the Top Cover

WARNING Electrical power is dangerous. Disconnect the electrical power to the monitor before you remove any component. Follow the necessary electrostatic discharge (ESD) procedures throughout the upgrade process.

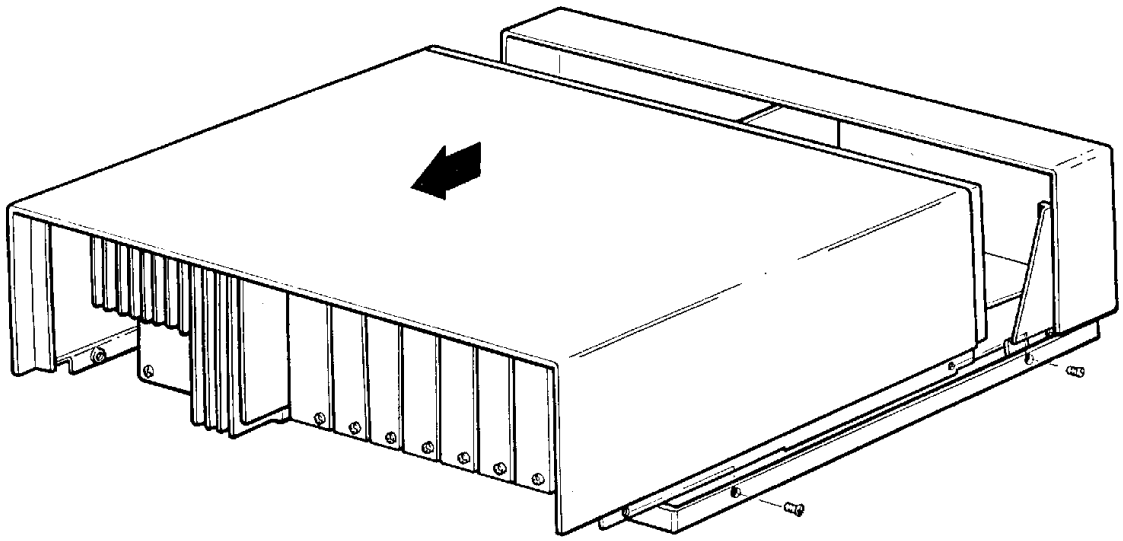
Access to most of the items within the monitor is only possible with the top cover of the monitor removed.

To remove the top cover:

1 Turn the system off and disconnect the power cable.

2 Undo the four screws situated on the sides of the monitor, and keep them safe for reuse.

3 Slide the cover towards the rear of the monitor and lift it off.



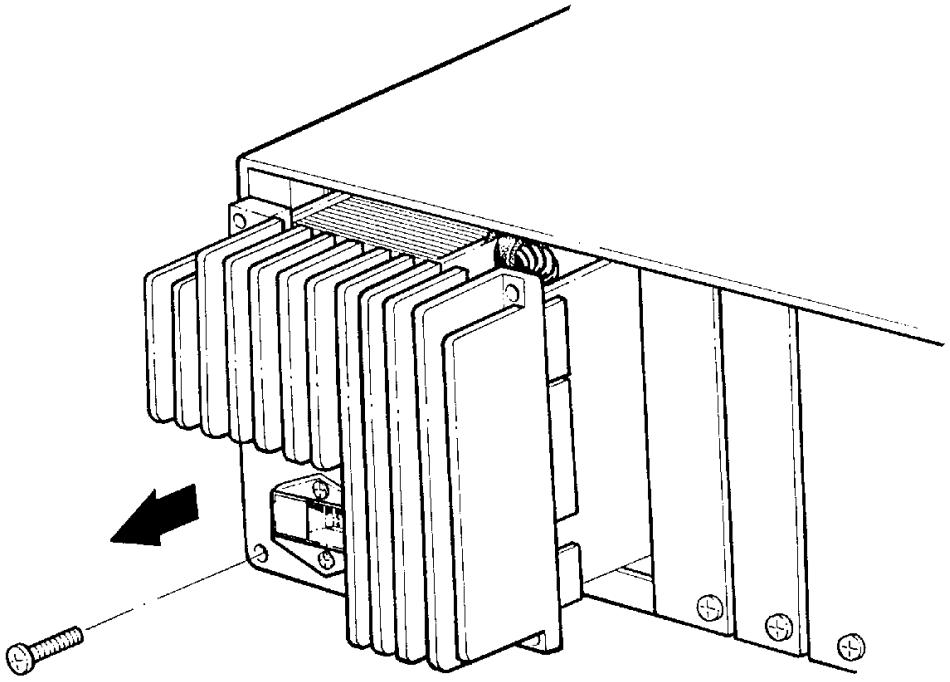
You will later refit the cover to the new chassis assembly supplied with the Upgrade Kit. Replacement of the cover is a reversal of the above procedure.

Instruction 3: Using the New Chassis Assembly

When you upgrade a Philips Series 50 IX monitor, you receive a new chassis unit that is fitted with the components listed under “Kit Contents” on page 2. All you have to do is transfer some components from the original monitor into the new chassis unit, perform a firmware upgrade, set the new serial number and configuration settings. From the original monitor, you must reuse the cover, the power supply, the recorder, the CPU board and the ROM board.

Reusing the Power Supply

To remove the power supply from the monitor:



1 Remove the ON/OFF button by pulling it forwards. You hear a click as the end of the buttons’s extension arm comes forward one notch from the switch unit located in the power supply. Release the end of the extension arm with the aid of a flat-bladed screwdriver. Turn the button/arm 90 degrees counter-clockwise, then pull it straight out.

2 Undo the four screws at the rear of the power supply.

3 Pull the power supply out of the rear of the monitor.

4 Put the power supply into the new card cage of the upgrade kit. This is basically a reversal of the above procedure. **DO NOT** force the Power Supply into the rear of the monitor. If it will not locate, remove and check that the pins connecting the supply to the Backplane are not bent. Reinsert the supply.

5 Replacement of the ON/OFF button is a reversal of the removal procedure. You should hear two clicks as the end of the button’s extension arm locates on the notches on the switch unit in the power supply.

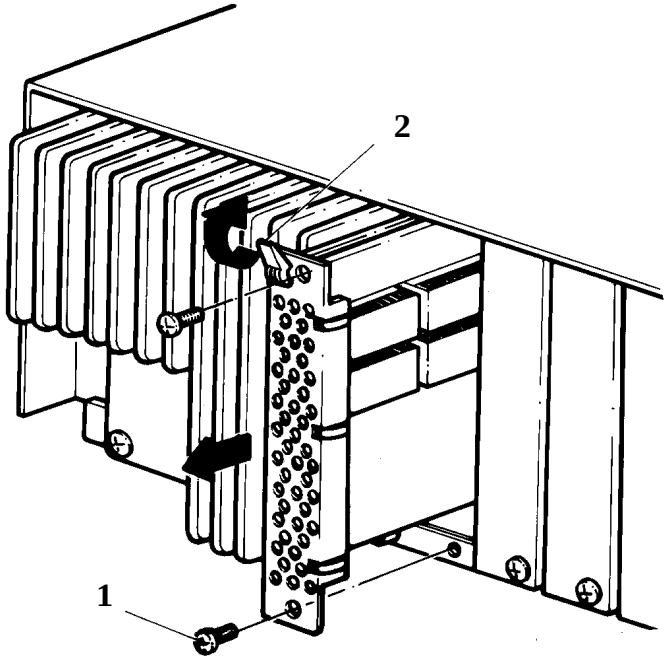
Reusing Boards

Remove and reuse all the original boards, (except those already fitted to the new chassis assembly; see “Kit Contents” on page 2), from your existing monitor and fit them into the new chassis supplied in the Support Upgrade Kit.

The technique for removal and replacement is the same for all of the boards.

1 Undo screws (1) and (2) at the top and bottom of the board.

2 Move lever (2) upwards and pull the board out of the rear of the monitor.



3 Put the new board(s) into the appropriate slot(s):.

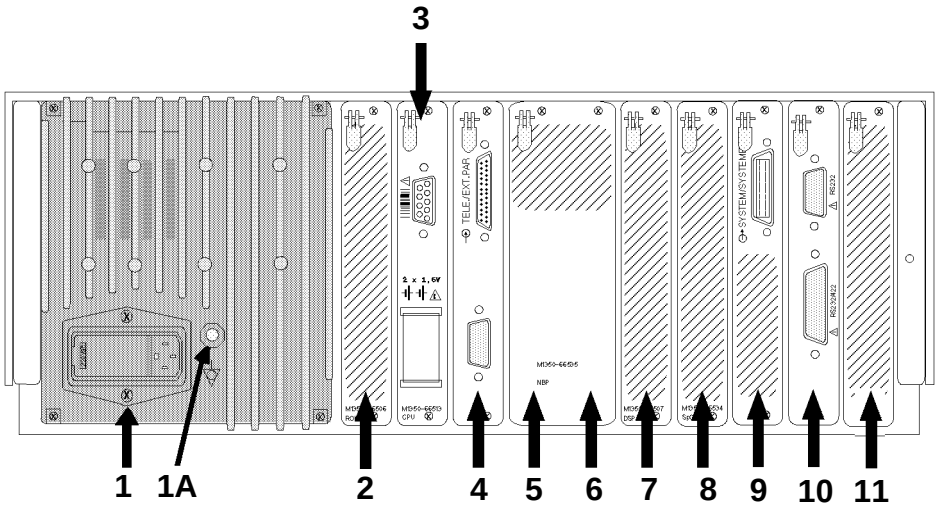


Figure 0-1 Rear Panel (Slot Positions)

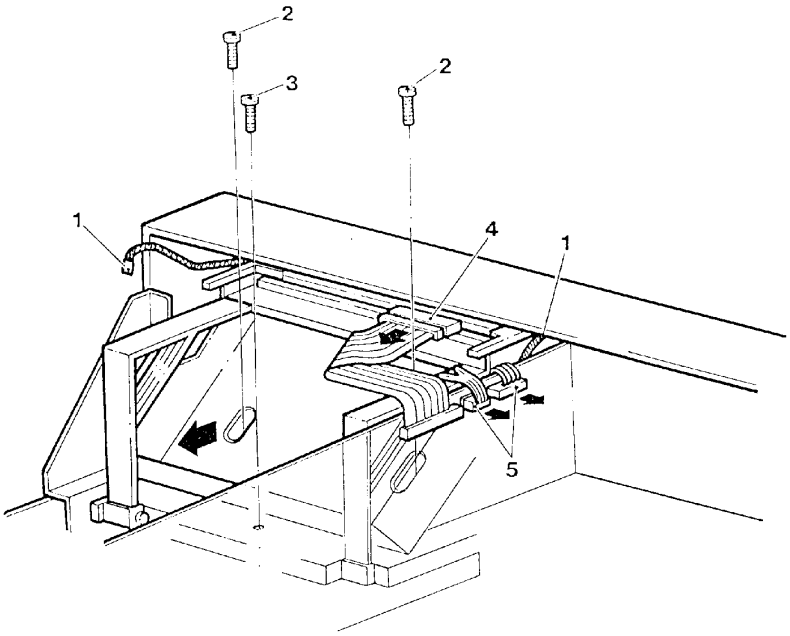
Slot Number	Description
1	Power Supply with Power Cord Connection, including Equipotential Grounding Point (**1A**)
2	ROM Board (M1350-66506)
3	CPU Board with Barcode Reader Interface (M1350-66513)
4	Telemetry Interface Connector (M1350-66536) and System Interface Connector (RS232) (lower)
***If the monitor has NIBP** (never applies to M1350A):*	
5 & 6	External Blood Pressure Board (M1350-66535). Optional. Connected to Slot 5, but physically occupies both Slot 5 and Slot 6 (there is a double slot cover in this case).
7	Digital Signal Processor (DSPII) (M1350-66507).
If the monitor does not have NIBP:	
5	Slot empty (there is a single slot cover in this case).
6	Digital Signal Processor-CoP Board (M1350-66505). Optional. (Note: **only** in conjunction with M1350-66504.)
7	Digital Signal Processor-CPU Board (M1350-66504). Optional. (Only with M1350-66505) ***OR*** Digital Signal Processor (DSPII) (M1350-66507). Optional. Here, Slots 5 and 6 are empty.
Other monitor options:	
8	Maternal SpO_2 Board (M1350-66534). Optional.
9	OBMS/ODIS Analog Interface (optional) (M1350-66532). Optional.
10	Dual Serial Interface (DSIF) (M1350-66533), External Fetal Pulse Oximeter/Adult Pulse Oximeter Interface (M1350-66534). All optional.
11	Fetal SpO_2 Board (M1350-66540). Optional.

NOTE The DIF board (M1350-66515) is located in Slot 0 inside the monitor (not visible from the rear). Reuse the rear blank covers from the M1350A monitor as appropriate.

4 Replace and tighten the screws.

Using the Existing Recorder

To swap the existing recorder to a new unit, follow these instructions:



1 Turn the system off and disconnect the power cable.

2 Remove the recorder paper.

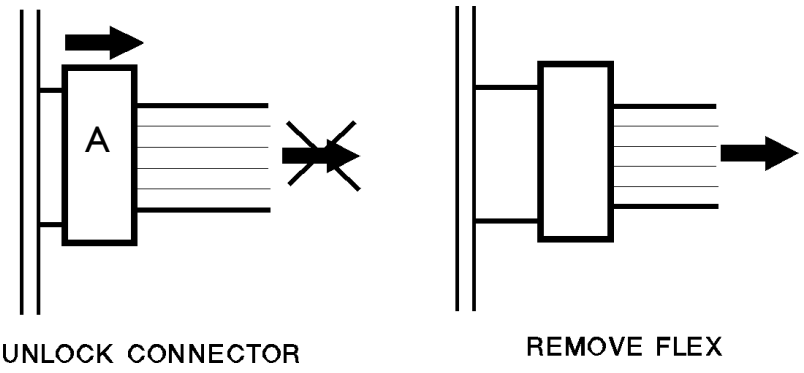
3 Disconnect the two earth straps **1** from the front assembly.

NOTE Take care not to lose the small O-rings when you have removed screws **2** and **3**.

4 Loosen screws **2** and **3**. Screws **2** are accessible via holes in the paper tray.

5 Disconnect the cables **4** and **5** between the Digital Interface board and the recorder. Remove screw **3**.

6 Unlock the flex layer by pulling the plastic part **A** slightly forward, and then pull the flex layer to release the flex.



7 Remove the recorder assembly by first sliding it away from the front panel, and then lifting it out.

8 Place it in the new chassis assembly, reversing the above procedure. Take care that the paper eject lever fits back into the paper eject knob.

Then replace the cover on the new chassis, using the four screws you reserved earlier.

Labeling

Place the new serial number label on the right-hand side of the cover so that it can be easily seen.

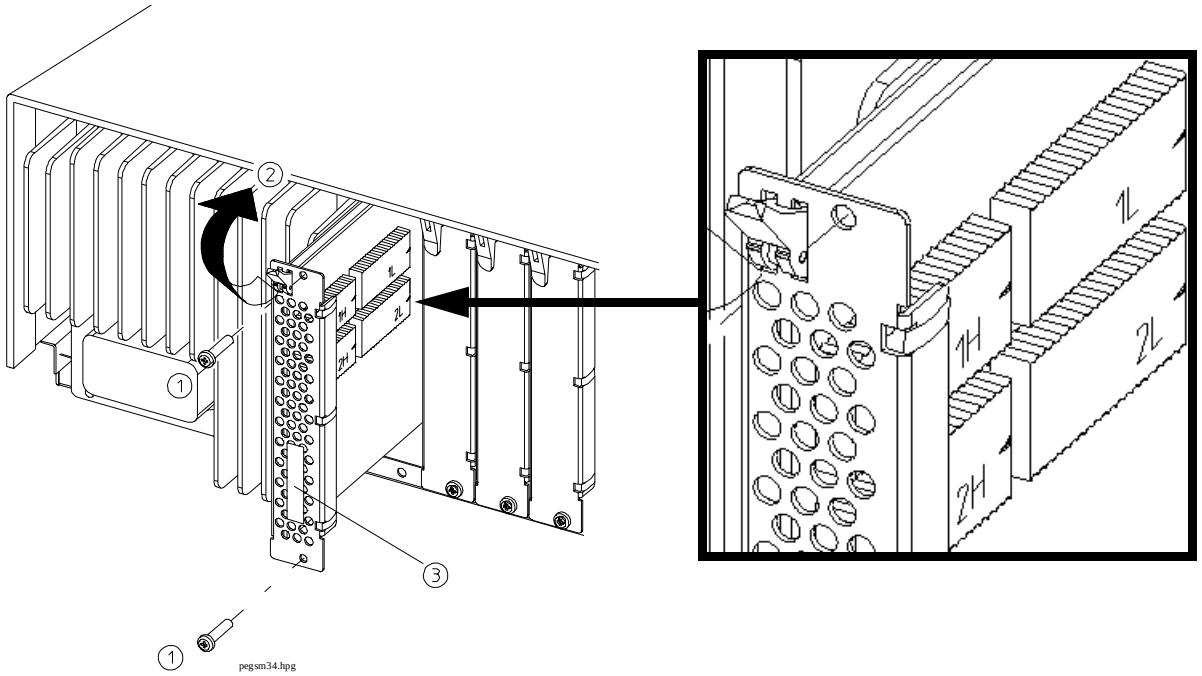
Instruction 4: Upgrading ROM Board EPROMs

Upgrades require new EPROMS. You must fit them now and then reconfigure the monitor.

1 Undo screws (1) at the top and bottom of the ROM Board.

2 Move lever (2) upwards and pull the board out of the rear of the monitor.

3 Using a flat-blade screwdriver, replace the EPROM set, according the diagram below.



4 Push the board back into the slot inside the rear of the monitor.

5 Replace the screws and tighten securely.

6 Stick the label (3) provided with the new EPROMS onto the board as shown.

Instruction 5: Reconfiguring the Monitor

Reconfigure the monitor options after upgrade using the “pegserv.exe” service software. You can find the “pegserv.exe” service software on the Fetal Monitoring Documentation CD-ROM, included with the Support Upgrade Kit.

When you exchange EPROMs on the ROM board you must rewrite the new serial number and restore the original options configuration (Twins, FPM, FHR Alerting). FHR Alerting is not approved for use in the USA.

1 Switch on the monitor, use the “pegserv.exe” service software for option configuration, using the access codes you obtained from your local Philips Response Center.

2 Enter the new serial number from the serial number labels (included in this upgrade kit). This must be done using the service software: see "Writing the Serial Number" in Chapter 4 of the *Service Guide,* on the CD-ROM included with this kit, for instructions. If a wrong serial number has been programmed a different access code is required corresponding to this serial number. If the correct serial number is programmed then the FMP and US twin options can be changed again and again with the identical access code.

3 You will be prompted for the option configuration. Ensure that you restore only those options that the customer had before you started the upgrade.

4 Double check the settings carefully.

5 Step back to the main menu of the service program and select "Configuration Tasks" to set the paper speed, time format, and so forth, or perform the self tests, or read the error log. You will find detailed instructions for all these tasks in Chapter 4 of the *Service Guide* on the CD-ROM included in this kit.

Restoring Service Settings Using Push Buttons

Using the data from the configuration table starting on page 4, you must now restore the original service settings. Of course, if you have added new functionality, you should ensure that default settings for the new parameter(s) are satisfactory for the customer and if not, change them. Set C17 to '2'. Record any new settings in the table starting on page 4. See "Configuring the Monitor Using Push buttons" in Chapter 4 of the *Service Guide,* on the CD-ROM included with this kit, for instructions on changing the settings.

Important! Return Your M1350A Components

Please call your local Philips Response Center for details of the return procedure and address.

Please clean and disinfect the components of the M1350A monitor that you did not reuse according to the instructions in this document, and return them, reusing the kit carton, to the address given to you by your local Philips Response Center. This entitles you to the exchange part pricing for the Support Upgrade Kit. Otherwise, you will be charged the new part price.

Disposal of the returned parts will be handled by Philips.

Safety Tests

This section defines the test and inspection procedures applicable to the upgrade of the fetal monitor. Refer to the Test and Inspection Matrix on page 14 to determine what test and inspection results must be reported after an installation or an exchange of system components has been carried out, and what safety tests to carry out.

WARNING Safety test requirements are set according to international standards, such as IEC/EN 60601-1 and IEC 60601-1-1, their national deviations, such as UL2601-1, CAN/CSA-C22.2 No. 601.1-M90 and No 601.1-S1-94, and specific local requirements.

The safety tests defined in this *Service Supplement* are derived from international standards but may not be sufficient to meet local requirements.

CAUTION The correct and accurate functioning of the equipment is ensured by the successful completion of the safety tests, performance test, and the system test (if applicable).

Safety Test Procedures

The test procedures outlined in this section are to be used only for verifying the safe installation or service of the product in its place of use. The safety tests described here refer specifically to installation and setup activities, and not to the aspects of safety that have already been tested during final acceptance at the factory.

Use safety testers complying with IEC 60601-1 internationally, or any local regulations applicable to the country of the installation. For safety test procedures see the operation instructions of the safety tester used, and follow any local regulations.

If you use the Metron safety tester, the Metron Report should print results as detailed in this chapter, along with other data.

For information and ordering guides for Metron products contact:
Metron AS, Vegamot 8, N-7048 Trondheim, Norway
www: http://www.metron-biomed.com

Performing Safety Tests

You must perform safety tests after completing the repair or upgrade as a standalone device, and each time you combine equipment to form a system, or exchange system components. In the case of a system, you must additionally perform the system test (see “Systems” on page 17).

How to Carry Out the Test Blocks

Test and Inspection Matrix tells you which test blocks to carry out.

Key to Test and Inspection Matrix: P = Pass; F = Fail; X = test result value to be recorded.

Test and Inspection Matrix

Test Block	Test or Inspection to be Performed	Expected Test Results	What to Record on Service Record	Enter Result
Visual	Inspect the unit, transducers and cables for any damage. Are they free of damage?	If Yes, Visual test is passed.	V:P or V:F	
Power On	Power on the unit. Does the self-test complete successfully? For details of the self-test, refer to the *Instructions for Use* (included on the CD_ROM supplied with this kit)	If Yes, Power On test is passed.	PO:P or PO:F	
System	Do you have a system? For information about what constitutes a system, see "Systems" on page 17			
	If you do **not** have a system: Perform Safety Tests (1) to (4) on the standalone device	See Safety Tests (1) to (4)	See Safety Tests (1) to (4)	See Safety Tests (1) to (4)
	If you **have** a system: Perform Safety Tests (1) to (4) on **all** system components, according to IEC/EN 60601-1-1			
Safety (1)	Perform Safety Test: Protective Earth (See page 15).	With mains cable: Maximum impedance = X1 (<= 100 mOhms)	S(1):P/X1 or S(1):F/X1	
Safety (2)	Perform Safety Test: Enclosure Leakage Current - Normal Condition (see page 15).	With mains cables: Maximum leakage current = X2 (<= 100µA)	S(2):P/X2or S(2):F/X2	
Safety (3)	Perform Safety Test: Enclosure Leakage Current - Single Fault Condition - Open Supply (see page 16).	With mains cables: Maximum leakage current = X3 (<= 500µA) (Note: maximum leakage current in the US: 300µA)	S(3):P/X3or S(3):F/X3	
Safety (4)	Perform Safety Test: Enclosure Leakage Current - Single Fault Condition - Open Earth (see page 16.)	With mains cables: Maximum leakage current = X4 (<= 500µA) (Note: maximum leakage current in the US: 300µA)	S(4):P/X4or S(4):F/X4	
Performance	Perform the parameter test with all parameters as described in the *Instructions for Use* for you monitor (included on the CD_ROM supplied with this kit). Do these tests complete without errors?	If Yes, Performance Test is passed.	P:P or P:F	

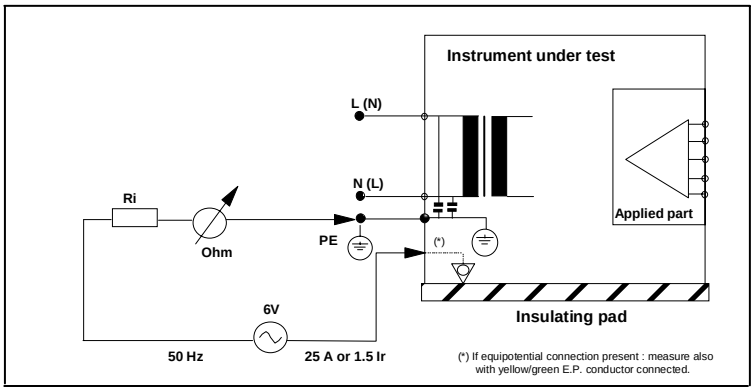
Description of Applicable Safety Tests

Abbreviations:

AP: Applied Parts	IUT: Instrument Under Test
GND: Ground	PE: Protective Earth

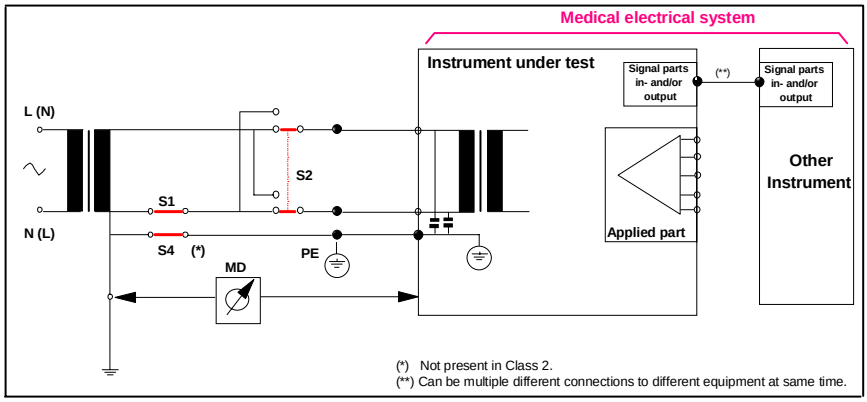
S(1): Protective Earth Test

Test to perform:
The protective earth test measures impedance of Protective Earth (PE) terminal to all exposed metal parts of Instrument under Test (IUT), which are connected to the Protective Earth (PE) for safety reasons. Normally it includes the wiring in the mains cable (max. 100 mOhm).
A test current of 25 Amps is applied for five to ten seconds. It is recommended to flex the main cable during the test to identify potential bad contact or damage to the earth wire.
Safety Test according to IEC 60601-1 (Clause 18).
Report the highest value.



S(2): Enclosure Leakage Current Test - Normal Condition (NC)

Test to perform:
The enclosure leakage current: normal condition is applicable to Class 1 and 2 equipment, type B, BF, and CF Applied Parts. The test measures leakage current of exposed metal parts of the Instrument Under Test; it tests normal and reversed polarity.
For Type BF and CF Applied Parts the test measures AP/GND.
Safety Test according to IEC 60601-1 (Clause 19.4g).
Report the highest value.



S(3): Enclosure Leakage Current Test - Single Fault Condition (SFC) Open Supply

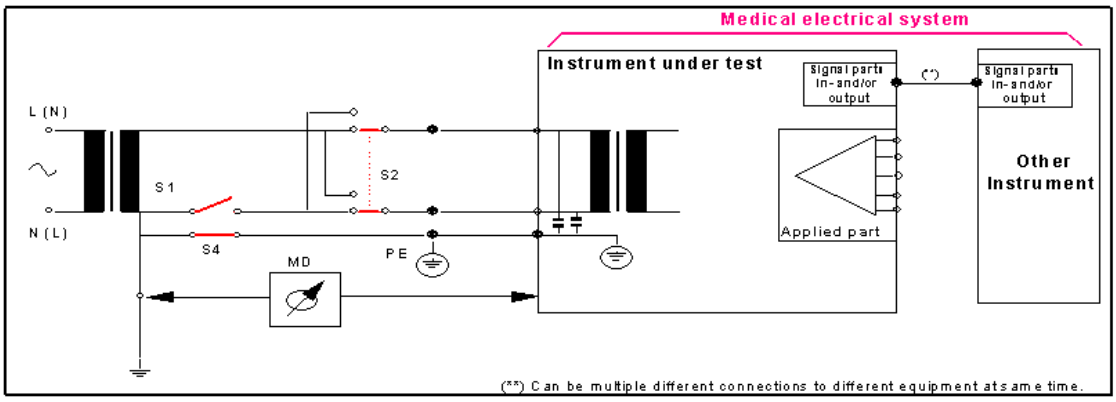
Test to perform:

The enclosure leakage current: single fault condition open supply is applicable to Class 1 and 2 equipment, type B, BF, and CF Applied Parts. The test measures leakage current of exposed metal parts of Instrument Under Test with one supply lead interrupted; it tests normal and reversed polarity.

For type BF and CF Applied Parts measures AP/GND.

Safety Test according IEC 60601-1 (Clause 19.4g).

Report the highest value.



S(4): Enclosure Leakage Current - SFC Open Earth (Ground)

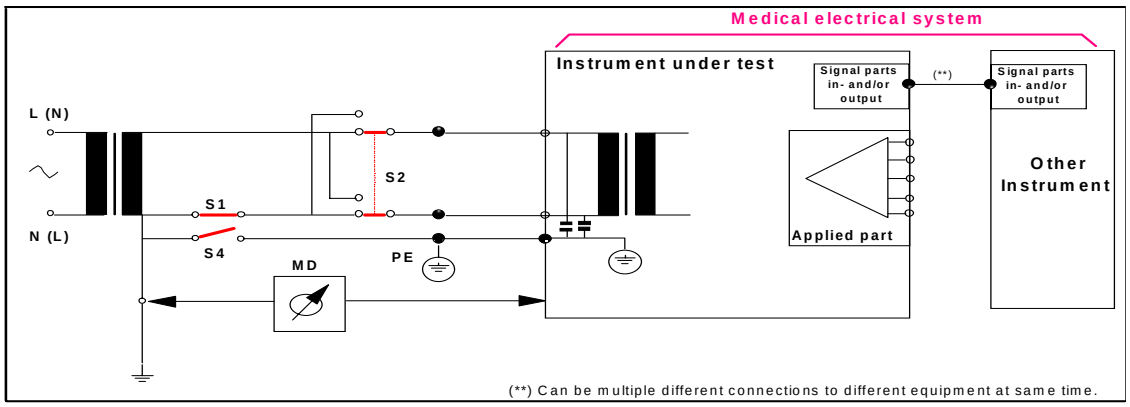
Test to perform:

The enclosure leakage current: single fault condition open earth (ground) is applicable to Class 1 equipment, type B, BF and CF Applied Parts. The test measures leakage current of exposed metal parts of Instrument Under Test with Protective Earth open-circuit; it tests normal and reversed polarity.

For type BF and CF Applied Parts the test measures AP/GND.

Safety Test according IEC 60601-1 (Clause 19.4g).

Report the highest value.



Systems

Whenever you connect equipment together, a system is created, and you must perform a System Test after installation for any combination of supported components that makes a system. For example, a system is formed whenever a fetal monitor is connected to:

- another fetal monitor
- a fetal telemetry system or cordless fetal transducer system
- any other external device (for example, Nellcor Puritan Bennett OxiFirst™ Fetal Oxygen Saturation monitor (N-400)).
- an obstetrical surveillance system, such as OB TraceVue.

or any combination of the above equipment.

WARNING Do not connect any devices that are not supported as part of a system.

WARNING Do not use additional AC mains extension cords or multiple portable socket-outlets.

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